

## CLAIMS

What is claimed is:

1. A method of conducting a transaction between a consumer, a merchant computer, and a billing computer connected together over a computer network, wherein the consumer purchases a product or service from the merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:
  - (1) initiating the transaction for the product or service;
  - (2) the consumer authorizing the transaction by transmitting an authorization code to the billing computer;
  - (3) the billing computer determining whether to approve the transaction by considering the authorization code; and
  - (4) fulfilling the transaction if the billing computer approves the transaction;wherein the merchant computer does not receive information identifying the consumer billing account.
2. The method of claim 1, wherein step (1) comprises the steps of:
  - (a) transmitting from the consumer to the merchant computer an order for the product or service;
  - (b) transmitting from the merchant computer to the billing computer information relating to the order;
  - (c) transmitting from the billing computer to the merchant computer a transaction identification code; and
  - (d) transmitting from the merchant computer to the consumer the transaction identification code.

3. The method of claim 1, wherein step (1) comprises the steps of:
- (a) transmitting from the consumer to the merchant an order for the product or service; and
  - (b) transmitting from the merchant computer to the consumer a transaction identification code.
4. The method of claim 1, wherein step (1) comprises the step of transmitting from the consumer to the billing computer an order for the product or service.
5. The method of claim 4, wherein steps (1) and (2) are combined into one transmission.
6. The method of claim 1, further comprising, prior to step (2), the step of transmitting from the billing computer to the consumer a description of the transaction.
7. The method of claim 1, wherein step (3) comprises the steps of:
- (a) transmitting an authorization request to a consumer billing authority; and
  - (b) receiving an authorization response from the consumer billing authority.
8. The method of claim 1, wherein the authorization code comprises a billing account identifier.
9. The method of claim 8, wherein the authorization code further comprises a PIN.
10. The method of claim 9, wherein:
- the PIN is associated with a predetermined restriction for the consumer; and
  - wherein step (3) includes the step of considering the predetermined restriction.
11. The method of claim 1, wherein step (4) comprises the step of delivering the product or service to the consumer.

12. The method of claim 11, wherein step (4) further comprises the step of transmitting from the merchant computer to the billing computer an acknowledgment of the delivery of the product or service indicating the status of the delivery.
13. The method of claim 12, further comprising the step of charging the transaction to the consumer billing account only if the delivery acknowledgment indicates that the delivery of the product or service was successful.
14. The method of claim 1, wherein step (4) comprises the steps of:
- (a) transmitting from the consumer to the billing computer a first consumer identifier;
  - (b) transmitting from the billing computer to the merchant computer the first consumer identifier;
  - (c) transmitting from the consumer to the merchant computer an order fulfillment request and a second consumer identifier;
  - (d) comparing the first consumer identifier and the second consumer identifier; and
  - (e) delivering the product or service to the consumer if the first consumer identifier matches the second consumer identifier.
15. The method of claim 1, wherein step (4) comprises the steps of:
- (a) transmitting from the consumer to the billing computer a first consumer identifier;
  - (b) transmitting from the consumer to the merchant computer an order fulfillment request and a second consumer identifier;
  - (c) transmitting from the merchant computer to the billing computer a fulfillment approval request and the second consumer identifier;
  - (d) comparing the first consumer identifier and the second consumer identifier;

(e) if the first consumer identifier matches the second consumer identifier, transmitting from the billing computer to the merchant computer a fulfillment approval response indicating approval to fulfill the transaction, and otherwise transmitting a fulfillment approval response indicating denial to fulfill the transaction; and

(f) delivering the product or service to the consumer if the fulfillment approval response indicates approval to fulfill the transaction.

16. The method of claim 14 or 15, wherein the first consumer identifier and the second consumer identifier identify only the consumer's connection to the computer network.

17. The method of claim 14 or 15, wherein the first consumer identifier and the second consumer identifier comprise a digital certificate.

18. A method of conducting a transaction between a consumer, a merchant computer, and a billing computer connected together over a computer network, wherein the consumer purchases a product or service from the merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

(1) transmitting from the consumer to the merchant computer an order for the product or service;

(2) transmitting from the merchant computer to the billing computer information relating to the order;

(3) transmitting from the billing computer to the merchant computer a transaction identification code;

(4) transmitting from the merchant computer to the consumer the transaction identification code;

- (5) transmitting from the billing computer to the consumer a description of the transaction;
- (6) transmitting from the consumer to the billing computer an authorization code for the transaction comprising a billing account identifier and a first consumer identifier;
- (7) the billing computer determining whether to approve the transaction by considering the authorization code;
- (8) transmitting from the billing computer to the merchant computer the first consumer identifier;
- (9) transmitting from the consumer to the merchant computer an order fulfillment request and a second consumer identifier;
- (10) comparing the first consumer identifier and the second consumer identifier; and
- (11) delivering the product from the merchant computer to the consumer if the billing computer approves the transaction and the first consumer identifier matches the second consumer identifier; and

wherein the merchant computer does not receive information identifying the consumer billing account.

19. A method of conducting a transaction between a consumer, a merchant computer, and a billing computer connected together over a computer network, wherein the consumer purchases a product or service from the merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

- (1) transmitting from the consumer to the merchant computer an order for the product or service;

- (2) transmitting from the merchant computer to the billing computer information relating to the order;
- (3) transmitting from the billing computer to the merchant computer a transaction identification code;
- (4) transmitting from the merchant computer to the consumer the transaction identification code;
- (5) transmitting from the billing computer to the consumer a description of the transaction;
- (6) transmitting from the consumer to the billing computer an authorization code for the transaction comprising a billing account identifier and a first consumer identifier;
- (7) the billing computer determining whether to approve the transaction by considering the authorization code;
- (8) transmitting from the consumer to the merchant computer an order fulfillment request and a second consumer identifier;
- (9) transmitting from the merchant computer to the billing computer a fulfillment approval request and the second consumer identifier;
- (10) comparing the first consumer identifier and the second consumer identifier;
- (11) transmitting from the billing computer to the merchant computer a fulfillment approval response indicating approval to fulfill the transaction if the first consumer identifier matches the second consumer identifier, and denial to fulfill the transaction otherwise; and

(12) delivering the product or service to the consumer if the billing computer approves the transaction and the fulfillment approval response indicates approval to fulfill the transaction; and

wherein the merchant computer does not receive information identifying the consumer billing account.

20. A method of conducting a multiplicity of transactions between a consumer, at least one merchant computer, and a billing computer connected together over a computer network, wherein each transaction is for a product or service that the consumer purchases from one of the at least one merchant computer, the method comprising the step of conducting each transaction according to the method of claims 1, 18, or 19.

21. The method of claim 20, further comprising the steps of:

aggregating the multiplicity of transactions; and

charging the aggregated multiplicity of transactions to the consumer billing account upon the occurrence of a specified event.

22. The method of claim 20, further comprising the steps of:

charging those of the multiplicity of transactions that meet predetermined criteria to the consumer billing account;

aggregating those of the multiplicity of transactions that do not meet the predetermined criteria; and

charging the aggregated transactions to the consumer billing account only upon the occurrence of a specified event.

23. The method of claim 20, further comprising the steps of:

obtaining from the consumer billing authority a pre-authorization that permits  
charging a predetermined amount to the consumer billing account;  
aggregating the multiplicity of transactions; and  
charging the aggregated transactions to the consumer billing account upon the  
occurrence of a specified event.

24. The method of claim 20, further comprising the steps of:

obtaining from the consumer billing authority a pre-authorization that permits  
charging a predetermined amount to the consumer billing account;  
charging those of the multiplicity of transactions that meet predetermined criteria to  
the consumer billing account;  
aggregating those of the multiplicity of transactions that do not meet the  
predetermined criteria; and  
charging the aggregated transactions to the consumer billing account upon the  
occurrence of a specified event.

25. A method of conducting a transaction at a merchant computer connected by a computer  
network to a consumer and a billing computer, wherein the consumer purchases a product  
or service from the merchant computer by charging the value of the product or service to a  
consumer billing account, the method comprising the steps of:

- (1) initiating the transaction for the product or service;
- (2) receiving an approval indication for the transaction from the billing computer; and
- (3) fulfilling the transaction if the billing computer approves the transaction; and

wherein the merchant computer does not receive information identifying the consumer  
billing account.



26. The method of claim 25, wherein step (1) comprises the steps of:
- (a) receiving an order for the product or service from the consumer;
  - (b) transmitting information relating to the order to the billing computer;
  - (c) receiving a transaction identification code from the billing computer; and
  - (d) transmitting the transaction identification code to the consumer.
27. The method of claim 25, wherein step (1) comprises the steps of:
- (a) receiving an order for the product or service from the consumer; and
  - (b) transmitting a transaction identification code to the consumer.
28. The method of claim 25, wherein step (3) comprises the step of delivering the product or service to the consumer.
29. The method of claim 28, wherein step (3) further comprises the step of transmitting to the billing computer an acknowledgment of the delivery of the product or service indicating the status of the delivery.
30. The method of claim 25, wherein step (3) comprises the steps of:
- (a) receiving a first consumer identifier from the billing computer;
  - (b) receiving an order fulfillment request and a second consumer identifier from the consumer;
  - (c) comparing the first consumer identifier and the second consumer identifier; and
  - (d) delivering the product or service to the consumer only if the first consumer identifier matches the second consumer identifier.
31. The method of claim 25, wherein step (3) comprises the steps of:
- (a) receiving an order fulfillment request and a consumer identifier from the consumer;

(b) transmitting to the billing computer a fulfillment approval request and the consumer identifier;

(c) receiving a fulfillment approval response from the billing computer; and

(d) delivering the product or service to the consumer if the fulfillment approval response indicates approval to fulfill the transaction.

32. A method of conducting a transaction at a merchant computer connected by a computer network to a consumer and a billing computer, wherein the consumer purchases a product or service from the merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

(1) receiving an approval indication for the transaction from the billing computer;

(2) fulfilling the transaction if the billing computer approves the transaction; and

wherein the merchant computer does not receive information identifying the consumer billing account.

33. A method of conducting a transaction at a merchant computer connected by a computer network to a consumer and a billing computer, wherein the consumer purchases a product or service from the merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

(1) receiving an order for the product or service from the consumer;

(2) transmitting information relating to the order to the billing computer;

(3) receiving a transaction identification code from the billing computer;

(4) transmitting the transaction identification code to the consumer;

(5) receiving an approval indication for the transaction and a first consumer identifier from the billing computer;

(6) receiving an order fulfillment request and a second consumer identifier from the consumer;

(7) comparing the first consumer identifier and the second consumer identifier; and

(8) delivering the product to the consumer if the billing computer approves the transaction and the first consumer identifier matches the second consumer identifier; and

wherein the merchant computer does not receive information identifying the consumer billing account.

34. A method of conducting a transaction at a merchant computer connected by a computer network to a consumer and a billing computer, wherein the consumer wishes to purchase a product or service from the merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

(1) receiving an order for the product or service from the consumer;

(2) transmitting information relating to the order to the billing computer;

(3) receiving a transaction identification code from the billing computer;

(4) transmitting the transaction identification code to the consumer;

(5) receiving an approval indication for the transaction from the billing computer;

(6) receiving an order fulfillment request and a consumer identifier from the consumer;

(7) transmitting a fulfillment approval request and the consumer identifier to the billing computer;

(8) receiving a fulfillment approval response from the billing computer;

(9) delivering the product or service to the consumer if the billing computer approves the transaction and the fulfillment approval response indicates approval to fulfill the transaction; and

wherein the merchant computer does not receive information identifying the consumer billing account.

35. A merchant computer connected by a computer network to a consumer and a billing computer, comprising:

a network interface for connecting to the computer network; and

a controller for conducting a transaction with the consumer, wherein the controller

conducts the transaction with the consumer upon receiving an approval code from the

billing computer,

wherein the merchant computer does not receive information identifying the consumer billing account.

36. The merchant computer of claim 35, further comprising a transaction memory for storing transaction information from the billing computer.

37. The merchant computer of claim 35, further comprising a comparator for comparing consumer identifiers one received from the consumer and a second one received from the billing computer.

38. The merchant computer of claim 35, wherein the controller performs the steps of:

(1) initiating the transaction for the product or service;

(2) receiving an approval indication for the transaction from the billing computer; and

(3) fulfilling the transaction if the billing computer approves the transaction.

39. The merchant computer of claim 36, wherein the controller performs the steps of:

- (1) initiating the transaction for the product or service;
- (2) storing information about the transaction in the transaction memory;
- (3) receiving an approval indication for the transaction from the billing computer;
- (4) storing the approval in the transaction memory; and
- (5) fulfilling the transaction if the billing computer approves the transaction.

40. The merchant computer of claim 37, wherein the controller performs the steps of:

- (1) initiating the transaction for the product or service;
- (2) receiving an approval indication for the transaction from the billing computer;
- (3) receiving a first consumer identifier from the billing computer;
- (4) receiving an order fulfillment request and a second consumer identifier from the consumer;
- (5) comparing the first consumer identifier and the second consumer identifier using the comparator; and
- (6) delivering the product or service to the consumer if the billing computer approves the transaction and the first consumer identifier matches the second consumer identifier.

41. A method of conducting a transaction at a billing computer connected to a computer network, wherein a consumer purchases a product or service from a merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

- (1) initiating the transaction for the product or service;
- (2) receiving an authorization code from the consumer indicating authorization to conduct the transaction;



the PIN is associated with a predetermined restriction for the consumer; and

the step of determining whether to approve the transaction further includes considering the predetermined restriction.

50. The method of claim 41, wherein step (5) comprises the step of receiving from the merchant computer an acknowledgment that the merchant computer delivered the product or service to the consumer and indicating the status of the delivery.
51. The method of claim 50, further comprising the step of charging the transaction to the consumer billing account only if the delivery acknowledgment indicates that the delivery of the product or service was successful.
52. The method of claim 41, wherein step (5) comprises the steps of:
  - (a) receiving a consumer identifier from the consumer; and
  - (b) transmitting the consumer identifier to the merchant computer.
53. The method of claim 41, wherein step (5) comprises the steps of:
  - (a) receiving from the consumer a first consumer identifier;
  - (b) receiving from the merchant computer a fulfillment approval request and a second consumer identifier;
  - (c) comparing the first consumer identifier and the second consumer identifier; and
  - (d) if the first consumer identifier matches the second consumer identifier, transmitting to the merchant computer a fulfillment approval response indicating approval to fulfill the transaction, and otherwise transmitting a fulfillment approval response indicating denial to fulfill the transaction.
54. A method of conducting a transaction at a billing computer connected to a computer network, wherein a consumer purchases a product or service from a merchant computer by

charging the value of the product or service to a consumer billing account, the method comprising the steps of:

- (1) receiving an authorization code from the consumer indicating authorization to conduct the transaction;
- (2) determining whether to approve the transaction by considering the authorization code;
- (3) transmitting approval to conduct the transaction to the merchant computer if the transaction is approved;
- (4) fulfilling the transaction if the transaction is approved; and

wherein the billing computer does not transmit information identifying the consumer billing account to the merchant computer.

55. A method of conducting a transaction at a billing computer connected to a computer network, wherein a consumer purchases a product or service from a merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

- (1) receiving from the merchant computer information relating to an order for the product or service placed by the consumer;
- (2) transmitting to the merchant computer a transaction identification code;
- (3) transmitting to the consumer a description of the transaction;
- (4) receiving from the consumer an authorization code for the transaction comprising a billing account identifier and a consumer identifier;
- (5) determining whether to approve the transaction by considering the authorization code;



(6) transmitting approval to conduct the transaction to the merchant computer if the transaction is approved;

(7) transmitting to the merchant computer the consumer identifier; and

wherein the billing computer does not transmit information identifying the consumer billing account to the merchant computer.

56. A method of conducting a transaction at a billing computer connected to a computer network, wherein a consumer purchases a product or service from a merchant computer by charging the value of the product or service to a consumer billing account, the method comprising the steps of:

(1) receiving from the merchant computer information relating to an order for the product or service placed by the consumer;

(2) transmitting to the merchant computer a transaction identification code;

(3) transmitting to the consumer a description of the transaction;

(4) receiving from the consumer an authorization code for the transaction comprising a billing account identifier and a first consumer identifier;

(5) determining whether to approve the transaction by considering the authorization code;

(6) transmitting approval to conduct the transaction to the merchant computer if the transaction is approved;

(7) receiving from the merchant computer a fulfillment approval request and a second consumer identifier;

(8) comparing the first consumer identifier and the second consumer identifier;

(9) transmitting to the merchant computer a fulfillment approval response indicating approval to fulfill the transaction if the first consumer identifier matches the second consumer identifier, and denial to fulfill the transaction otherwise; and wherein the billing computer does not transmit information identifying the consumer billing account to the merchant computer.

57. A method of conducting a multiplicity of transactions between a consumer and at least one merchant computer at a billing computer, wherein:

the consumer, the at least one merchant computer, and the billing computer are connected together over a computer network;

each transaction is for a product or service that the consumer purchases from at least one merchant computer; and

the method comprises the step of conducting each of the multiplicity of transactions according to the method of claims 41, 55, or 56.

58. The method of claim 57, further comprising the steps of:

aggregating the multiplicity of transactions; and

charging the aggregated multiplicity of transactions to the consumer billing account upon the occurrence of a specified event.

59. The method of claim 57, further comprising the steps of:

charging those of the multiplicity of transactions that meet predetermined criteria to the consumer billing account;

aggregating those of the multiplicity of transactions that do not meet the predetermined criteria; and

charging the aggregated transactions to the consumer billing account upon the occurrence of a specified event.

60. The method of claim 57, further comprising the steps of:

obtaining from the consumer billing authority a pre-authorization that permits charging a predetermined amount to the consumer billing account;  
aggregating the multiplicity of transactions;  
charging the aggregated transactions to the consumer billing account upon the occurrence of a specified event.

61. The method of claim 57, further comprising the steps of:

obtaining from the consumer billing authority a pre-authorization that permits charging a predetermined amount to the consumer billing account;  
charging those of the multiplicity of transactions that meet predetermined criteria to the consumer billing account;  
aggregating those of the multiplicity of transactions that do not meet the predetermined criteria; and  
charging the aggregated transactions to the consumer billing account upon the occurrence of a specified event.

62. A billing computer connected to a consumer and a merchant computer by a computer network, comprising:

a network interface for connecting to the computer network;  
a consumer billing authority interface for connecting to a consumer billing authority;  
a transaction memory for storing transaction information;  
an account database for storing consumer account information;

a comparator for determining whether to approve transactions;

a controller for conducting a transaction including the purchased of a product or service by charging the value of the product or service to a consumer billing account; and

wherein the billing computer does not transmit information identifying the consumer billing account to the merchant computer and does not receive information identifying the consumer billing account from the merchant computer.

63. The billing computer of claim 62, further comprising a predefined database containing predefined transaction descriptions.
64. The billing computer of claim 62, further comprising an aggregation memory for storing previously completed transactions that are to be aggregated together into one or more billing events for submission to the consumer billing authority.
65. The billing computer of claim 62, wherein the controller performs the steps of:
  - (1) initiating the transaction for the product or service;
  - (2) storing information about the transaction in the transaction memory;
  - (3) receiving an authorization code from the consumer indicating authorization to conduct the transaction;
  - (4) determining whether to approve the transaction using the computer by considering the authorization code and the consumer account information in the account database; and
  - (5) if the transaction is approved, performing the further steps of:
    - (6) transmitting approval to conduct the transaction to the merchant computer;
    - (7) fulfilling the transaction; and

(8) communicating with the consumer billing authority to charge the transaction to the consumer billing account.

66. The billing computer of claim 63, wherein the controller performs the steps of:

- (1) initiating the transaction for the product or service based upon a predefined transaction description in the predefined database;
- (2) storing information about the transaction in the transaction memory;
- (3) receiving an authorization code from the consumer indicating authorization to conduct the transaction;
- (4) determining whether to approve the transaction by considering the authorization code and the consumer account information in the account database; and
- (5) if the transaction is approved, performing the further steps of:
- (6) transmitting approval to conduct the transaction to the merchant computer;
- (7) fulfilling the transaction; and
- (8) communicating with the consumer billing authority to charge the transaction to the consumer billing account.

67. The billing computer of claim 64, wherein the controller performs the steps of:

- (1) initiating the transaction for the product or service;
- (2) storing information about the transaction in the transaction memory;
- (3) receiving an authorization code from the consumer indicating authorization to conduct the transaction;
- (4) determining whether to approve the transaction by considering the authorization code and the consumer account information in the account database;
- (5) if the transaction is approved, performing the steps of:

(a) transmitting approval to conduct the transaction to the merchant computer;  
and

(b) fulfilling the transaction; and

wherein the controller performs the further steps of:

(6) storing the transaction in the aggregation memory;

(7) aggregating into an aggregate total the transaction with one or more previously  
completed transactions stored in the aggregation memory; and

(8) communicating with the consumer billing authority to charge the aggregate total  
to the consumer billing account as one or more billing events.

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